

Before the
Federal Communications Commission
Washington, D.C. 20554

In Re)	
)	
)	DA 02-1311
Spectrum Policy Task Force Seeks Public)	ET Docket No. 02-135
Comment on Issues related to Commission's)	
Spectrum Policies)	

To: Spectrum Policy Task Force

REPLY COMMENTS OF VERIZON WIRELESS

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SUMMARY

Verizon Wireless respectfully submits its reply comments to the Spectrum Policy Task Force Public Notice seeking comment on spectrum policy issues.¹ In order to achieve its objective of conducting a “systematic evaluation of existing spectrum policies and making recommendations as to the possible improvements,” the Task Force has asked specific questions on issues related to market principles, interference, spectrum efficiency, public safety, and international concerns.² There is evidence of the great interest in this topic in the more than 150 comments filed thus far by entities ranging from some of the largest corporations in the United States to private individuals. But it is also evident that there is an extremely broad breadth of opinion on what, if anything, is broken, and what the Commission should do.

¹ *Spectrum Policy Task Force Seeks Public Comment On Issues Related To Commission's Spectrum Policies, Public Notice*, ET Docket No. 02-135, DA 02-1311 (rel. June 6, 2002) (*Public Notice*).

This task is made all the more difficult because, as the Task Force deliberates, the Commission has decided or is actively considering many of these issues in individual proceedings. Issues such as spectrum sharing, spectrum rights, defining harmful interference, and providing spectrum for public safety have been addressed or raised in, for example, the Northpoint, Ultra-wideband, MSS Flexibility and 800 MHz proceedings,³ and more generally in the Secondary Markets proceeding.⁴ Verizon Wireless believes that many of these issues are best resolved on a case-by-case basis, when the Commission can consider the specific facts of the situation. We agree with those commenters that say that many of the issues that the Task Force raises must be considered in context and examined individually.⁵

There are, however, certain principles that warrant broad application. First, market forces should play an important role in spectrum management. But, in order for a market for spectrum to function properly, the Commission must establish clear rights for licensees and be vigilant in upholding those rights. Second, once the Commission

² *Id.*

³ *Amendment of Parts 2 and 25 of the Commission's Rules to Permit Operation of NGSO FSS Systems Co-Frequency with GSO and Terrestrial Systems in the Ku-Band Frequency Range, Memorandum Opinion and Order*, ET Docket No. 98-206 (rel. May 23, 2002) (*Northpoint Proceeding*); *Revision of Part 15 of the Commission's Rules Regarding Ultra-Wideband Transmission Systems, First Report and Order*, ET Docket 98-153 (rel. Apr. 22, 2002) (*Ultra-wideband Proceeding*); *In the Matter of Flexibility for Delivery of Communications by Mobile Satellite Service Providers in the 2 GHz Band, the L-Band, and the 1.6/2.4 GHz Band, Notice of Proposed Rulemaking*, IB Docket 01-185 (rel. Aug. 17, 2001) (*MSS Flex Proceeding*); and *In the Matter of Improving Public Safety Communications in the 800 MHz Band and Consolidating the 900 MHz Industrial/Land Transportation and Business Pool Channels, Notice of Proposed Rulemaking*, WT Docket 02-55, 17 FCC Rcd 4873 (800 MHz Proceeding).

⁴ *Promoting Efficient Use of Spectrum Through Elimination of Barriers to the Development of*, Notice of Proposed Rulemaking, WT Docket No. 00-230, 15 FCC Rcd 24203 (*Secondary Markets Proceeding*).

establishes those rights, it should permit the operation of the market and the pressures of competition to ensure that spectrum is used efficiently, and not intervene to impose “efficient use” mandates. Third, it should establish rights with regard to harmful interference that recognize the various types of interference that can impair operation of new digital and other technologies. Fourth, the Commission must not discard its important role in allocating spectrum and resort instead to a reliance on flexibility to drive spectrum use. Past experience confirms that open-ended flexibility does not necessarily promote the Commission’s or Congress’ spectrum objectives.

I. MARKET PRINCIPLES PLAY AN IMPORTANT ROLE IN SPECTRUM MANAGEMENT

A. A Properly Functioning Market Relies on Clearly-Defined Rights

Verizon Wireless agrees with those commenters that state that a functioning market depends fundamentally on a clear definition of underlying rights that demarcate areas of exclusive use.⁶ Furthermore, we agree that such an “exclusive use” model cannot coexist with the “spectrum sharing” model, that is a model where the Commission would “overlay” (or “underlay,” as in the case of Ultra-wideband) new uses of spectrum on existing uses.⁷ To the extent that the Commission wants a more market-oriented

⁵ See e.g., Comments of AT&T Wireless Services at 2 (AWS Comments), Comments of The Boeing Company at 11 (Boeing Comments), and Comments of Motorola, Inc. (Motorola Comments) at 2.

⁶ See e.g., AWS Comments at 3, Comments of Cingular PCS (Cingular Comments) at 30; Comments of Sprint Corporation (Sprint Comments) at 8.

⁷ See e.g., Cingular Comments at 5-6. To the extent that the Commission wants to open more spectrum to sharing (see, e.g., Comments of Part-15 Organization, Comments of Jon M. Peha at 6, Comments of New America Foundation, et al. (New America Foundation Comments) at 39-40, Comments of Microsoft Corporation) it should consider doing so only in spectrum that has been set aside for such purposes and that has not been

spectrum process to work, it must clearly define the exclusive rights of existing users, and uphold those rights.

Spectrum sharing, on the other hand, if forced on the wireless industry, would be antithetical to the very market-oriented approach the FCC purports to promote, because the potential for interference necessarily inhibits the ability of licensees to flexibly deploy future technologies and services, and because the uncertainty as to spectrum rights will distort and impede an efficient spectrum market.⁸ Under a spectrum sharing model, even after a final licensing decision, a licensee's rights to a particular set of frequencies are not certain, and the Commission can decide at any time to permit new entrants.⁹ This lack of certainty can have a chilling effect on government auctions as well as the secondary market for spectrum. A company's willingness to spend billions of dollars on spectrum in a government auction is directly related to the rights it believes it is receiving.¹⁰ As Cingular sets out in its comments, the notion of mutual exclusivity is fundamental to the

licensed for exclusive use. *See also* Comments of the Cellular Telecommunications & Internet Association (CTIA Comments) at 11.

⁸ *See e.g.*, Comments of Winstar Communications, LLC (Winstar Comments) at 7.

⁹ In a recent speech, describing a regime under which the Commission concludes that sharing between current users and unlicensed devices is possible, Commissioner Abernathy cautioned that she was "generally skeptical of these types of overlay unlicensed operations because of the difficult technical issues involved and the degree to which they may diminish the property-like rights associated with licensed services." *See Unlicensed Spectrum Success -- Lessons for the Next Chapter in FCC Spectrum Management*, Remarks of FCC Commissioner Kathleen Q. Abernathy, San Diego Telecom Council, San Diego, CA (July 18, 2002) (as prepared for delivery).

¹⁰ *See* Sprint Comments at 8 and AWS Comments at 14. For example, we note that some commenters would have the Commission reduce the geographic size of what bidders paid for at auction by adopting for PCS rules similar to the unserved cellular rules. *See* Comments of the National Telephone Cooperative Association at 5-6, Comments of Rural Telecommunications Group (RTG Comments) at 6-7 and Rural Cellular Association (RCA Comments) at 6. We disagree with this approach because it would undermine the type of exclusivity that the Commission should be seeking to preserve.

Commission licensing process, and “a license that lacks exclusivity does not facilitate market-based spectrum management.”¹¹

Furthermore, many of the issues on which the Task Force seeks comment also affect the dynamics of the Commission’s market-based auction policy and procedures. In particular, the level of uncertainty surrounding the rights that will be accorded a winning bidder can change the nature of the auction. Too much uncertainty regarding the allocation can change the auction process from the Congressionally-mandated purpose of the rapid introduction of new technologies, products and services “without administrative delays,”¹² to nothing more than a high-risk speculation that in fact undermines the certainty that any spectrum market needs to function properly.

Also, as many commenters state, the Commission not only should provide certainty and clarify existing users’ rights, but also give them the ability to sell or lease those rights to others.¹³ In such an environment, for example, if an entity is interested in offering a new mobile or fixed use in the PCS band, it should seek a contractual arrangement with the PCS licensee. It should not need to or be permitted to petition the FCC for access to that spectrum. This policy would allow *licensees* to negotiate rights and decide what is an acceptable level of shared use. The Secondary Markets proceeding clearly contemplates such arrangements.¹⁴

¹¹ Cingular at 8.

¹² 47 USC §309(j)(3)(A)

¹³ Sprint Comments at 9-10; RTG Comments at 8; Comments of Cantor Fitzgerald at 3, Winstar Comments at 3.

¹⁴ See *Secondary Markets Proceeding* at ¶¶ 24-62.

B. The Marketplace Provides Sufficient Incentives For CMRS Providers To Use Spectrum Efficiently

We disagree with those commenters that suggest current Commission policies do not provide sufficient incentives for efficient spectrum use.¹⁵ As others explain, a commercial licensee that has purchased its license either at auction or in the secondary market will use its licensed spectrum efficiently.¹⁶ As the FCC held years ago in determining that Commercial Mobile Radio Service (CMRS) warehousing was unlikely, providers face real opportunity costs associated with holding a license and intending to warehouse it¹⁷ or use it inefficiently. Given the absence of evidence that carriers have an incentive to warehouse, or have in fact done so, there is no need for the Commission to take action.

The commercial mobile industry is also a good example of how the Commission's existing market-oriented policies have resulted in more efficient spectrum use. Over the past decade, CMRS operators have deployed state-of-the-art digital technology and more intensive frequency reuse techniques in an effort to make the most efficient use of their

¹⁵ See, e.g., Comments of Arraycom, Inc. at 6-7; Boeing Comments at 4.

¹⁶ See, e.g., New America Foundation Comments at 28, Comments of the United Telecom Council at 9-10, Winstar Comments at 6, and CTIA Comments at iii, 12-14. Comments of Flarion at 1.

¹⁷ Telephone and Data Systems, Inc. (TDS) asserts, "[i]t seems self evident that there is a reasonable likelihood that national and super-regional carriers will simply choose to warehouse spectrum won at auction even though they may have no near-term plans for its use." TDS Comments at 5. There is nothing self-evident about that statement, and TDS offers no facts to support it. To the contrary, the volume of CMRS transactions, including hundreds of spectrum disaggregations and partitionings, undercut any claim of warehousing. Moreover, there are many examples of spectrum swaps in which a carrier has "swapped" spectrum with a competitor to gain access to a market where it does not currently offer service. See e.g., *Cingular Wireless LLC and VoiceStream Wireless Corporation Seek FCC Consent for Assignment of PCS Licenses*, WT Docket No. 01-10, *Public Notice*, DA 01-135 (placing on public notice) (rel. Jan. 18, 2001) ("Cingular

assigned spectrum. This trend continues with the introduction of advanced digital technologies, such as cdma2000. Of course, the Commission must be mindful of the fact that while these new deployments result in greater spectrum efficiency, they must also be economically efficient. More intrusive policies that would require the deployment of a particular spectrally-efficient technology or the achievement of a particular efficiency standard, without any consideration of the marketplace, would put operators in the undesirable position of continually chasing the most efficient technology while incurring substantial costs and imposing excessive burdens on their customers.

C. The Commission Must Apply its Prohibition Against “Harmful Interference” to Ban All Adverse Impacts from Interference

The Public Notice asks whether a new definition of “harmful interference” is needed and what level of interference should be considered “acceptable” given that the radio spectrum is becoming increasingly congested.¹⁸ Verizon Wireless believes that the FCC’s current definition of “harmful interference” is appropriately broad. Harmful interference is defined as “interference which endangers the functioning of a radionavigation service or of other safety services or seriously degrades, obstructs, or repeatedly interrupts a radiocommunication service operating in accordance with” the Commission’s rules.¹⁹ It is not the definition of “harmful interference” that is in need of change but the way in which the Commission enforces its rules or establishes policies regarding interference. It would be wrong to assume that more intensive use of the radio spectrum requires that some interference previously considered “harmful” should be

VoiceStream Swap”); *Public Notice*, DA 01-821 (consenting to the swap) (rel. Mar. 30, 2001).

¹⁸ *Public Notice* at 4.

considered “acceptable.” The Commission should be more resolute than ever in fulfilling its statutory mandate to prevent harmful interference.²⁰

It is easy to understand the “harmful” effects of an interfering signal when it prevents entirely the ability of a radiocommunication device to properly receive a transmission. However, interference can have other harmful effects that extend beyond the communications to a particular device. In past decisions the Commission has not fully considered the potential for interference to a Code Division Multiple Access (“CDMA”) mobile system employing the IS-95 standard. Interference produced within the band of the CDMA system can affect the forward link of the system by increasing the noise floor of the handset receiver. As the noise level increases, the handset requires more power to maintain forward link transmissions to offset the additional noise. As a result, the more interference produced in-band, the more power the handset needs to maintain continued transmission. If the forward link power required to overcome the interference exceeds the maximum allowed for the handset, the wireless call will be dropped or the wireless customer will be prevented from making or receiving calls. This is referred to as direct blocking.

Interference can also cause indirect blocking. Even in situations where the base station can provide the additional power required by the handset to offset the interference and maintain a communications link, the base station will correspondingly have less forward link capacity to assign to other wireless customers. As a result, interference can reduce the capacity of the mobile network because a base station will be able to support fewer customers than it was designed to serve.

¹⁹ 47 CFR §2.1(c).

Interference resulting from indirect blocking is no less “harmful” than that resulting from direct blocking. In making assessments regarding the potential for one radio system or device to interfere with another, the Commission must take into account not only the degradation, obstruction, or interruption in service that an interfering signal causes for a particular mobile device, but also the effects on the entire mobile system. The Commission should not permit either licensed or unlicensed devices to operate within the spectrum assigned to other licensed users if it results in “harmful interference” to the incumbents,²¹ and define that term broadly to encompass all types of adverse impacts to a system’s capacity, not merely direct call blocking.

The Commission suggests that increased flexibility afforded to licensees may impact the way in which it should handle interference matters.²² Verizon Wireless agrees. Even where the Commission has not granted full “service flexibility” under its rules, it has generally permitted licensees to deploy any technology they wish, subject to certain basic technical and interference criteria. As a result, a company that employs one technology today may employ an entirely different technology next year based on its own specific business objectives. Importantly, the interference environment is directly influenced by the type of service and technology employed, both by the interfered system and the interfering system.

This is another reason why band-sharing is not a solution. A band-sharing arrangement that may not result in harmful interference today may result in harmful

²⁰ See also 47 USC §§302(a), 303(f). See also Comments of QUALCOMM Inc. at 4.

²¹ We disagree with those commenters that would place the burden of proof with respect to harmful interference on the existing licensee rather on the new entrant. See e.g. Comments of XtremeSpectrum, Inc.

²² Public Notice at 4

interference in the future, if different services and/or technologies are deployed. For example, allowing other licensed or unlicensed devices to use spectrum currently assigned to cellular or PCS licensees would inhibit cellular/PCS licensees' ability to flexibly deploy new services and technologies in the future. In this way, sharing would not only fail to promote efficient spectrum use; it would actually impede efficient deployment of new services.

II. THE COMMISSION SHOULD EVALUATE AND IMPROVE UPON ITS SPECTRUM MANAGEMENT PROCESSES

Absent from the Public Notice, but obviously important to many commenters, is the importance of the Commission's role in allocating and assigning spectrum.²³ The Task Force should not simply assume that markets will resolve all the spectrum management issues before the Commission.²⁴ For a variety of reasons, including the manner in which some spectrum has been licensed, the Commission cannot ignore its role as spectrum manager. It must make timely and effective allocation decisions, while instituting market-oriented policies and improving its own processes to manage the radio spectrum in a way that promotes its most effective use.

Verizon Wireless generally agrees with those commenters that suggest that on a going forward basis, with all new allocations and assignments, that the Commission's spectrum management model should be "market-oriented, relying on exclusive, flexible

²³ See e.g., CTIA Comments.

²⁴ In Commissioner Abernathy's recent speech to the Federal Communications Bar Association on spectrum issues, she noted that even in a market-based system, there are occasions in which the Commission must consider relocating incumbent users to make room for new users. *What Tomorrow May Bring – the Future of the FCC's Licensed*

well-defined licenses protected from interference.²⁵ However, the most intractable issues are not those surrounding how to license what limited “new” spectrum that is available, but rather how to ensure that currently licensed spectrum can be effectively “repurposed” for another use. Given the legacy of decades of FCC licensing, Verizon Wireless does not believe that the market may always offer the best solutions to this problem.

In fact, one of the most successful spectrum allocation decisions that the Commission has made in the last decades involved a combined application of administrative decision-making and market-oriented principles. In its Personal Communications Services (PCS) decision, the Commission reached the conclusion that it would reallocate spectrum from fixed use to mobile use, but provided incentives and a clear relocation path for the incumbents in the spectrum that eventually was to become the PCS band. In addition, when establishing service rules for this new service, the Commission chose to be flexible in its approach – it adopted rules with a minimum of technical requirements and maximum flexibility in technology choice. Finally, Congress adopted legislation that permitted the Commission to auction these frequencies, thus ensuring that the licenses would go to the highest and best use.

In the years since the first PCS decision, however, the Commission has also experimented with more market-oriented approaches to the allocation process. Verizon Wireless urges the Task Force to look closely at the Commission’s past experience with these approaches and to evaluate their relative success or failure. What worked in the PCS context was that the Commission had a broad vision of what the spectrum could be

Spectrum Policy, Remarks of FCC Commissioner Kathleen Q. Abernathy, FCBA Seminar West, San Diego, CA (July 20, 2002) (as prepared for delivery).

²⁵ Cingular Comments at 17.

used for, a clarity and certainty about the path to reach that result, minimally intrusive regulations for the new service, and economic incentives to use the spectrum efficiently. When one or more of those elements is missing, Commission actions (often reciting “market-based” policies and “flexibility”) have been less successful.²⁶

There is no doubt that, in the PCS context, had the Commission granted flexibility to the microwave licensees rather than relocating them, the robustly competitive CMRS industry would not have developed. Even economists who believe that the Commission should move entirely toward a market-based system recognize the importance of “sensible initial allocations” and the importance of identifying portions of the spectrum that might be suitable for certain types of use.²⁷

There are problems with flexibility if used indiscriminately. Cingular correctly argues that “granting flexibility after licensing can balkanize the spectrum. . . making it more difficult for the spectrum to be reconstituted into adequate and commercially

²⁶ For example in the 700 MHz band, the Commission set up a relocation process that was similar to the PCS/microwave clearing process, except that it was missing critical elements. The Commission was barred by Congress from providing date certainty and would not provide cost certainty despite compelling reasons to do so. As a result, there was no certainty regarding either timing or cost of incumbent relocation. Under still another approach, in 1997 the Commission auctioned licenses in the Wireless Communications Service (“WCS”) as a “flexible” band. More than five years later, the band is largely unused. Various technical restrictions, designed to protect adjacent incompatible services, and the lack of a clear vision about how the band would be used have delayed the deployment of service in this band.

²⁷ “Because of transaction costs, sensible initial allocations are important to quickly achieving efficient spectrum use. For example, in order to afford potential providers wishing to offer services that require large bandwidths an opportunity to compete while *minimizing potentially significant transaction costs to acquire contiguous spectrum from multiple parties*, the Commission should make large frequency blocks initially available in some portions of the spectrum. . . .” (Emphasis added.) Gregory L. Rosston and Jeffrey S. Steinberg *Using Market-Based Spectrum Policy to Promote the Public Interest*, URL http://www.fcc.gov/Bureaus/Engineering_Technology/Informal/spectrum.wp at 10.

reasonable amounts.”²⁸ The approach taken in more recent years to simply grant flexibility and “let a thousand flowers bloom” will not always facilitate the market reallocation of spectrum. As the PCS experience shows, reclaiming and reallocating spectrum can be a better course than relying on the market to eventually transfer rights from one set of users to another. In some case, the latter “market-oriented” course might result in the spectrum continuing to lie fallow.

To the extent that relocations are necessary to make spectrum available for new uses, Verizon Wireless agrees with those commenters that suggest that the Commission, in concert with Congress, should consider the use of auction proceeds to fund these relocations.²⁹ Currently the Communications Act requires that auction proceeds be deposited in the U.S. Treasury.³⁰ Winning bidders then negotiate with incumbents post-auction. As a result, bidders cannot know while bidding with total certainty the costs and timeframes associated with relocation. In the context of moving Federal operations from specified government bands, Congress is considering draft legislation that would establish a fund to pay for those relocations.³¹ If adopted, such a trust fund would ensure that the full value of the spectrum is realized and that the process to relocate Federal systems is handled in an efficient manner. This concept, applied more broadly, could help move spectrum management toward a more market-oriented system.

²⁸ Cingular Comments at 10.

²⁹ CTIA Comments at 9, Cingular Comments at 30.

³⁰ 47 USC §309(j)(8)(A).

³¹ See Letter from Theodore W. Kassinger, General Counsel, Department of Commerce to Dennis Hastert, Speaker of the House of Representatives, U.S. Congress (July 23, 2002).

III. CONCLUSION

Verizon Wireless urges the Task Force to propose to the Commission that it adopt clear and enforceable rights for licensees and, at times, continue an activist role in managing spectrum. We recognize the enormity of the Task Force's mission as it prepares its recommendations to the Commission in what is but the first step toward reforming the spectrum management process. We look forward to continuing to participate in the process.

Respectfully submitted,

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